

Calc  
Date

JHL  
8/1/2020

Check  
Date

BDE  
8/29/2020

ONLY YELLOW ITEMS ARE RECHECKED FOR STAGE 3 SUBMITTALS  
OTHER ITEMS HAVE BEEN TRANSFERRED FROM STAGE 2 CALC.

**STRUCTURE REMOVED, OVER 20 FOOT SPAN, AS PER PLAN**

**1 LUMP**

Existing deck area = 4256 sq ft  
 unit removal cost = 22 \$/sq ft  
 inflation factor = 1.22  
 unit removal cost = 27 \$/sq ft  
 Total removal cost = 115000 \$

*From ODOT 2013 estimating spreadsheet  
 Assumed 2.5% per year*

R.A. 84 CY  
 P1 84 CY  
 P2 94 CY  
 F.A. 93 CY

**APPROACH SLAB REMOVED**

**129 SQ YD**

Length = 20 ft  
 Width = 29 ft  
 Number = 2 ft  
 Total Area = 129 sy

**GRANULAR MATERIAL, TYPE B**

**33 CU YD**

Assumed that triangular shape of granular material (type B) sections are located in every 2 layers of geogrid.

BDE Check 8/28-20

|  |          |  |          |
|--|----------|--|----------|
| RA                                     |          | FA                                     |          |
| Granular material Length =             | 40.19 ft | Granular material Length =             | 43.90 ft |
| Geogrid Thickness per layer =          | 1.00 ft  | Geogrid Thickness per layer =          | 1.00 ft  |
| Number of geogrid layer =              | 7 ea     | Number of geogrid layer =              | 8 ea     |
| Section area (triangular shape) =      | 3.00 sf  | Section area (triangular shape) =      | 3.00 sf  |
| Number of granular material sections = | 3 ea     | Number of granular material sections = | 4 ea     |
| Volume =                               | 362 cf   | Volume =                               | 527 cf   |
| Total Volume =                         | 888 CF   |  |          |
|  | 33 CY    |  |          |

**COFFERDAMS, CRIBS AND SHEETING, AS PER PLAN**

**1 LUMP**

Area at Rear Abut = 475 sf  
 Area at Forward Abut = 486 sf  
 Price = 75 \$/sf  
 Total = 80000 \$

**CLASS QC1 CONCRETE WITH QC/QA, FOOTING**

**53 CU YD**

Rear Abutment = 229.17 sf  
 Thickness = 3 ft

Rear Abutment = 244.33 sf  
 Thickness = 3 ft

Total Volume = 53 cy

**CLASS QC1 CONCRETE WITH QC/QA, ABUTMENT NOT INCLUDING FOOTING**

**71 CU YD**

| Rear Abutment    |            | Forward Abutment |                |
|------------------|------------|------------------|----------------|
|                  | 3'-9" Stem |                  | 4' Stem        |
| Elevation Area = | 149.11 sf  | Elevation Area = | 126.08 sf      |
| Thickness =      | 3.75 ft    | Thickness =      | 4 ft           |
|                  | 2'-6" Stem |                  | Left Seat      |
| Elevation Area = | 12.99 sf   | Plan Area =      | 21.82 sf       |
| Thickness =      | 2.5 ft     | Height =         | 5.26 ft        |
|                  | Wingwalls  |                  | Right Seat     |
| Elevation Area = | 119.44 sf  | Plan Area =      | 22.68 sf       |
| Thickness =      | 2.5 ft     | Height =         | 2.77 ft        |
|                  | Corner     |                  | Left Corner    |
| Plan Area =      | 2.59 sf    | Plan Area =      | 4.98 sf        |
| Height =         | 9.91 ft    | Height =         | 10.16 ft       |
| Total =          | 33.92 cy   |                  | Right Corner   |
|                  |            | Plan Area =      | 8.42 sf        |
|                  |            | Height =         | 7.63 ft        |
|                  |            |                  | Left Wingwall  |
|                  |            | Elevation Area = | 58.51 sf       |
|                  |            | Thickness =      | 2.5 ft         |
|                  |            |                  | Right Wingwall |
|                  |            | Elevation Area = | 15.37 sf       |
|                  |            | Thickness =      | 2.5 ft         |
| Total =          | 71 cy      | Total =          | 36.35 cy       |

**CLASS QC1 CONCRETE WITH QC/QA, PIER**

**70 CU YD**

| Pier 1               |           | Pier 2               |           |
|----------------------|-----------|----------------------|-----------|
| Cap Elevation Area = | 144.97 sf | Cap Elevation Area = | 147.01 sf |
| Cap Thickness =      | 4.17 ft   | Cap Thickness =      | 4.17 ft   |
| Column Diameter =    | 3 ft      | Column Diameter =    | 3 ft      |
| Column 1 Height =    | 12.1 ft   | Column 1 Height =    | 10.06 ft  |
| Column 2 Height =    | 11.61 ft  | Column 2 Height =    | 9.5 ft    |
| Column 3 Height =    | 10.71 ft  | Column 3 Height =    | 8.57 ft   |
| Column 4 Height =    | 9.78 ft   | Column 4 Height =    | 7.64 ft   |

Pier 1 Total Volume = 33.94 cy      Pier 2 Total Volume = 32.05 cy  
 Pier Total Volume = 70 cy

**CLASS QC2 CONCRETE WITH QC/QA, SUPERSTRUCTURE** **250 CU YD**

Deck  
 Deck Area = 6028.63 sf  
 Deck Thickness = 9 in  
 Deck Volume Total = 167.46 cy

**Rear Abutment Diaphragm**  
 Diaphragm  
 Elevation Area = 172.68 sf  
 Depth = 3.75 ft  
 Left Post Plan Area = 3.75 sf  
 Left Post Height = 4.73333333 ft  
 Right Post Plan Area = 3.71 sf  
 Right Post Height = 4.95 ft

**Forward Abutment Diaphragm**  
 Diaphragm  
 Elevation Area = 187 sf  
 Depth = 4 ft  
 Left Post Plan Area = 3.93 sf  
 Left Post Height = 4.73 ft  
 Right Post Plan Area = 3.98 sf  
 Right Post Height = 4.69 ft

**Pier Diaphragm**  
 Diaphragm  
 Elevation Area = 112.79 sf  
 Depth = 4 ft  
 Beam Volume to Subtract  
 Beam X-Sectional Area = 2.56 sf  
 Beam Length in Diaphragm = 0.75 ft  
 # of Beams = 8 ea

Deck Concrete to Subtract  
 Plan Area = 120.3 sf  
 Deck Thickness = 9.00 in

Deck Concrete to Subtract  
 Plan Area = 136.98 sf  
 Deck Thickness = 9.00 in

# of Piers = 2 ea  
 Pier Diaph Total = 32.28 cy

Approach Slab Volume to Subtract  
 Plan Area = 18.51 sf  
 Height = 1.25 ft

Approach Slab Volume to Subtract  
 Plan Area = 19.59 sf  
 Height = 1.25 ft

Beam Volume to Subtract  
 Beam X-Sectional Area = 2.56 sf  
 Beam Length in Diaphragm = 2.68 ft  
 # of Beams = 4 ea

Beam Volume to Subtract  
 Beam X-Sectional Area = 2.56 sf  
 Beam Length in Diaphragm = 2.88 ft  
 # of Beams = 4 ea

Rear Abut Diaph Total = 20.11 cy      Forward Abut Diaph Total = 23.28 cy

**Haunch Concrete**

| Beam     | Topping Thickness (in) |      |       |        |      |       |        |      |       |  |
|----------|------------------------|------|-------|--------|------|-------|--------|------|-------|--|
|          | Span 1                 |      |       | Span 2 |      |       | Span 3 |      |       |  |
|          | A                      | B    | C     | D      | E    | F     | G      | H    | J     |  |
| 1, 5, 9  | 12.16                  | 11.5 | 13.25 | 12.17  | 11.5 | 13.25 | 12.19  | 11.5 | 13.26 |  |
| 2, 6, 10 | 13.12                  | 11.5 | 14.47 | 12.9   | 11.5 | 14.47 | 13.52  | 11.5 | 14.12 |  |
| 3, 7, 11 | 13.13                  | 11.5 | 14.55 | 12.88  | 11.5 | 14.55 | 13.36  | 11.5 | 14.38 |  |
| 4, 8, 12 | 12.99                  | 11.5 | 14.95 | 13.14  | 11.5 | 14.95 | 13.09  | 11.5 | 14.97 |  |

Haunch Width = 12 in  
 Span 1 Length = 52.14 ft  
 Span 2 Length = 50.89 ft  
 Span 3 Length = 52.04 ft

| Beam     | Avg. Haunch Thickness (in) |        |        |
|----------|----------------------------|--------|--------|
|          | Span 1                     | Span 2 | Span 3 |
| 1, 5, 9  | 3.10                       | 3.11   | 3.11   |
| 2, 6, 10 | 3.65                       | 3.59   | 3.66   |
| 3, 7, 11 | 3.67                       | 3.61   | 3.69   |
| 4, 8, 12 | 3.74                       | 3.77   | 3.77   |

| Beam     | Haunch Volume (cf) |        |        |
|----------|--------------------|--------|--------|
|          | Span 1             | Span 2 | Span 3 |
| 1, 5, 9  | 13.48              | 13.17  | 13.50  |
| 2, 6, 10 | 15.85              | 15.23  | 15.87  |
| 3, 7, 11 | 15.94              | 15.30  | 15.98  |
| 4, 8, 12 | 16.23              | 16.00  | 16.33  |

Haunch Volume Total = 6.77 cy

Total Volume = 250 cy

**ROCK EXCAVATION** **128 CU YD**

Rear Abutment  
 Plan Area = 100.31 sf  
 Depth = 2.8 ft

Rear Abutment Geogrid  
 Area 492.30 sf  
 Depth 6.39 ft

Total Volume = 128 cy

**UNCLASSIFIED EXCAVATION** **639 CU YD**

Rear Abutment  
 Plan Area = 344.02 sf  
 Depth = 8.2 ft

Forward Abutment  
 Plan Area = 365.92 sf  
 Depth = 11.5 ft

Rear Abutment Geogrid  
 Area 492.30 sf  
 Depth 6.39 ft

Forward Abut. Geogrid  
 Area 1075.45 sf  
 Depth 6.54 ft

Total Rear Volume = 105 cy

Total Forward Volume = 156 cy

Total 117 cy

Total 261 cy

Total Volume = 639 cy

**510E1000(EACH) DOWEL HOLES WITH NONSHRINK, NONMETALLIC GROUT** **12 Ea**

Ea 12

**EPOXY COATED REINFORCING STEEL** **91780 POUND**

|            | Quantity   | Multiplier | lbs      |
|------------|------------|------------|----------|
| Abutments  | 124 cy     | 50 lbs/cy  | 6200     |
| Piers      | 70 cy      | 70 lbs/cy  | 4900     |
| Diaphragms | 75.66 cy   | 100 lbs/cy | 7566.386 |
| Deck       | 6028.63 sf | 7.5 lbs/sf | 45214.73 |
| Total      |            |            | 63881    |

|     |       |
|-----|-------|
| lbs | 10757 |
|     | 15497 |
|     | 7916  |
|     | 57610 |
|     | 91780 |

**SEMI-INTEGRAL DIAPHRAGM GUIDE** **2 EACH**

**SEALING OF CONCRETE SURFACES (EPOXY-URETHANE)** **389 SQ YD**

Rear Abutment

Forward Abutment

|  |  |
|--|--|
| Front Elevation Area = 368.21 sf                 | Front Elevation Area = 394.47 sf                 |
| Additional Area at Top Front of Diaph = 22.87 sf | Additional Area at Top Front of Diaph = 24.15 sf |
| Left Corner Top Area = 0.00 sf                   | Left Corner Top Area = 4.98 sf                   |
| Right Corner Top Area = 2.59 sf                  | Right Corner Top Area = 8.42 sf                  |
| Left Top of Diaphragm = 3.75 sf                  | Left Top of Diaphragm = 3.93 sf                  |
| Right Top of Diaphragm = 3.71 sf                 | Right Top of Diaphragm = 3.98 sf                 |
| Wingwall Thickness = 2.50 ft                     | Wingwall Thickness = 2.50 ft                     |
| Left Wingwall Top Length = 5.88 ft               | Left Wingwall Top Length = 6.83 ft               |
| Right Wingwall Top Length = 8.25 ft              | Right Wingwall Top Length = 5.50 ft              |
| Left Wingwall Back Elevation Area = 2.24 sf      | Left Wingwall Back Elevation Area = 5.05 sf      |
| Right Wingwall Back Elevation Area = 5.28 sf     | Right Wingwall Back Elevation Area = 2.15 sf     |

Rear Abutment Total = 49.00 sy      Forward Abutment Total = 53.00 sy

|                                      |                              |                                      |                              |
|--------------------------------------|------------------------------|--------------------------------------|------------------------------|
| Left Exterior                        |                              | Right Exterior                       |                              |
| Beam Perimeter = 4.81 ft             | Beam Length = 154.51 ft      | Beam Perimeter = 4.81 ft             | Beam Length = 154.75 ft      |
| Deck Edge Height = 1.50 ft           | Deck Edge Length = 155.77 ft | Deck Edge Height = 1.50 ft           | Deck Edge Length = 156.22 ft |
| Deck Underside Plan Area = 378.48 sf |                              | Deck Underside Plan Area = 249.85 sf |                              |
| Left Exterior Total = 150.60 sy      |                              | Right Exterior Total = 136.51 sy     |                              |

|                                 |   |                                 |   |
|---------------------------------|---|---------------------------------|---|
| Pier-1                          |   | Pier-2                          |   |
| Elevation Area = 144.97 sf      | Bottom Length = 36.14 ft                | Elevation Area = 147.04 sf      | Bottom Length = 36.65 ft                |
| Bottom Width = 4.17 ft          | Column Diameter = 3.00 ft               | Bottom Width = 4.17 ft          | Column Diameter = 3.00 ft               |
| Column-1 Height = 12.1 ft       | Column-2 Height = 11.64 ft              | Column-1 Height = 10.06 ft      | Column-2 Height = 9.5 ft                |
| Column-3 Height = 10.74 ft      | Column-4 Height = 9.78 ft               | Column-3 Height = 8.57 ft       | Column-4 Height = 7.64 ft               |
| Drilled Shaft Diameter = 3.5 ft | Avg-Drilled Shaft Exposed Height = 4 ft | Drilled Shaft Diameter = 3.5 ft | Avg-Drilled Shaft Exposed Height = 4 ft |

Pier-1 Total = 97.85 sy      Pier-2 Total = 93.38 sy

Total Area = 389 sy

Pier sealing removed based on Stage 3 comment and subsequent phone conversation

**TYPE 2 WATERPROOFING 108 SQ YD**

|                         |             |            |           |                                      |
|-------------------------|-------------|------------|-----------|--------------------------------------|
|                         |             |            |           | Total Abut Diaphragm Area = 45.00 SY |
| <b>Rear Abutment</b>    |             |            |           |                                      |
| Breastwall              | 55.40625 ft | WW 1       | Width     | 5.583333 ft                          |
| Top El 1                | 604.88      | Top EL 1   | 609.78    | 9.5 ft                               |
| Top El 2                | 606.96      | Top EL 2   | 608.5     | 611.91                               |
| Top of Foo              | 602         | Bot El.    | 604.88    | 609.93                               |
|                         |             |            |           | 606.96                               |
|                         |             |            |           | Total Abutment Area = 63.00 SY       |
| Diaphragm               |             | Abutment   |           | Calc BDE 9/14/2020                   |
| Width                   | 38.67708 ft | Total Area | 278.60 sf | Chec MAK 9/14/2020                   |
| Depth                   | 4.925 ft    | Total Area | 30.96 sy  |                                      |
|                         |             | Total Area | 190.48 sf |                                      |
|                         |             | Total Area | 21.16 sy  |                                      |
| <b>Forward Abutment</b> |             |            |           |                                      |
| Breastwall              | 57.72917 ft | WW 1       | Width     | 7.5 ft                               |
| Top El 1                | 600.76      | Top EL 1   | 605.55    | 6 ft                                 |
| Top El 2                | 598.27      | Top EL 2   | 603.43    | 603.13                               |
| Top of Foo              | 595.5       | Bot El.    | 600.76    | 602.06                               |
|                         |             |            |           | 598.27                               |
| Diaphragm               |             | Abutment   |           | Diaphragm                            |
| Width                   | 42.64583 ft | Total Area | 285.71 sf | Total Area                           |
| Depth                   | 4.88 ft     | Total Area | 31.75 sy  | 208.11 sf                            |
|                         |             |            |           | 23.12 sy                             |

**DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 2 (52'-8" BEAM LENGTH) 4 EACH**

**DRAPED STRAND PRESTRESSED CONCRETE BRIDGE I-BEAM MEMBERS, LEVEL 3, TYPE 2 (53'-10" BEAM LENGTH) 8 EACH**

**INTERMEDIATE DIAPHRAGMS 9 EACH**

**2" PREFORMED EXPANSION JOINT FILLER 49 SQ FT**

|                            |                |                            |                 |
|----------------------------|----------------|----------------------------|-----------------|
| Rear Abutment              |                | Forward Abutment           |                 |
| Total Length = 9.29 ft     | Depth = 2.5 ft | Total Length = 9.54 ft     | Depth = 2.67 ft |
| Rear Abut Total = 23.23 sf |                | Rear Abut Total = 25.47 sf |                 |
| Total Area = 49 sf         |                |                            |                 |

**SEMI-INTEGRAL ABUTMENT EXPANSION JOINT SEAL 98 FT**

|                             |
|-----------------------------|
| Rear Abutment = 47.58 ft    |
| Forward Abutment = 50.18 ft |
| Total = 98 ft               |

**ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE), AS PER PLAN (12 1/2 "x14"x2 3/16 ") 8 EACH**

**ELASTOMERIC BEARING WITH INTERNAL LAMINATES AND LOAD PLATE (NEOPRENE) (11 1/2 "x14"x2 3/16 ") 16 EACH**

**RAILING (TWIN STEEL TUBE) 326 FT**

**POROUS BACKFILL WITH FILTER FABRIC 49 CU YD**

|                            |                     |                            |                  |
|----------------------------|---------------------|----------------------------|------------------|
| Rear Abutment              |                     | Forward Abutment           |                  |
| Elevation Area = 578.27 sf | Thickness = 2.00 ft | Elevation Area = 599.51 sf | Thickness = 2 ft |

|                           |        |    |                           |        |    |
|---------------------------|--------|----|---------------------------|--------|----|
| Footing Notch Length =    | 49.06  | ft | Footing Notch Length =    | 52.43  | ft |
| Footing Notch Height =    | 3.00   | ft | Footing Notch Height =    | 3.00   | ft |
| Footing Notch Thickness = | 0.25   | ft | Footing Notch Thickness = | 0.25   | ft |
| Geogrid Area =            | 303.6  | sf | Geogrid Area =            | 305.4  | sf |
| 3'x1'x40.25' backfill =   | 120.75 | cf | 3'x1'x43.92' backfill =   | 131.76 | sf |
| Rear Abutment Total =     | 23.46  | cy | Forward Abutment Total =  | 25.21  | cy |
| Total =                   | 49     |    |                           |        |    |

**6" PERFORATED CORRUGATED PLASTIC PIPE** **109 FT**

|                    |     |    |
|--------------------|-----|----|
| Rear Abutment =    | 54  | ft |
| Forward Abutment = | 55  | ft |
| Total =            | 109 | ft |

**6" NON-PERFORATED CORRUGATED PLASTIC PIPE, INCLUDING SPECIALS** **91 FT**

|                    |    |    |
|--------------------|----|----|
| Rear Abutment =    | 46 | ft |
| Forward Abutment = | 45 | ft |
| Total =            | 91 | ft |

**DRILLED SHAFTS, 36" DIAMETER, INTO BEDROCK, AS PER PLAN** **48 FT**

|          |       |
|----------|-------|
| Pier 1   |       |
| Length = | 24 ft |
| Pier 2   |       |
| Length = | 24 ft |
| Total =  | 48 ft |

**DRILLED SHAFTS, 42" DIAMETER, ABOVE BEDROCK, AS PER PLAN** **111 FT**

|                  |          |         |        |          |         |           |    |
|------------------|----------|---------|--------|----------|---------|-----------|----|
| Rear Abutment    | Length = | 16 ft   | Pier 1 | Length = | 33.6 ft | abut pier | 56 |
| Forward Abutment | Length = | 39.6 ft | Pier 2 | Length = | 20.8 ft |           | 55 |
| Total =          |          | 111 ft  |        |          |         |           |    |

**DRILLED SHAFTS, 42" DIAMETER, INTO BEDROCK, AS PER PLAN** **48 FT**

|                  |       |
|------------------|-------|
| Rear Abutment    |       |
| Length =         | 24 ft |
| Forward Abutment |       |
| Length =         | 24 ft |
| Total =          | 48 ft |

|                                   | RA       |          | FA     | P1     | P2     |       |       |               |
|-----------------------------------|----------|----------|--------|--------|--------|-------|-------|---------------|
|                                   | (D1, D2) | (D3, D4) |        |        |        |       |       |               |
| Bottom of footing/cap elevation = | 599.00   | 599.00   | 592.50 | --     | --     |       |       |               |
| Top of rock el. =                 | 591.00   | --       | 582.60 | 580.60 | 583.80 |       |       |               |
| Top of collar el. =               | --       | --       | --     | 589.00 | 589.00 |       |       |               |
| Rock socket depth =               | 6.00     | 6.00     | 6.00   | 6.00   | 6.00   |       |       |               |
| 36" into rock =                   | --       | --       | --     | 24.00  | 24.00  | Abut  | Pier  | Total (ft)    |
| 42" above rock =                  | 16.00    | --       | 39.60  | 33.60  | 20.80  | 56.00 | 55.00 | <b>111.00</b> |
| 42" into rock =                   | 12.00    | 12.00    | 24.00  | --     | --     | 48.00 |       | <b>48.00</b>  |

**REINFORCED CONCRETE APPROACH SLABS WITH QC/QA (T=15")** **206 SQ YD**

|                         |        |    |
|-------------------------|--------|----|
| Rear Approach Slab =    | 924.99 | sf |
| Forward Approach Slab = | 924.03 | sf |
| Total Area =            | 206    | sy |

|      |     |           |
|------|-----|-----------|
| Calc | BDE | 9/16/2020 |
| Chec | MAK | 9/17/2020 |

**TYPE A INSTALLATION** **77 FT**

**ROCK CHANNEL PROTECTION, TYPE C WITH FABRIC FILTER** **341 CU YD**

|                           |         |    |                   |        |    |
|---------------------------|---------|----|-------------------|--------|----|
| Rear Abut. Plan Area =    | 1497    | sf | Rear Abut. Area = | 1544   | sf |
| Forward Abut. Plan Area = | 1335.55 | sf | Thickness =       | 2      | ft |
| Incline =                 | 2.5 :1  |    | Inclined Volume = | 114.37 | cy |
| Adjusted Area =           | 3050.75 | sf |                   |        |    |
| Thickness =               | 2       | ft |                   |        |    |
| Inclined Volume =         | 225.98  | cy |                   |        |    |
| Total =                   | 341     | cy |                   |        |    |

**WEARING COURSE REMOVED** **582 SQ YD**

Approach Slab Length = 50.00 ft  
 Span 1 Length = 37.93 ft  
 Span 2 Length = 39.00 ft  
 Span 3 Length = 36.69 ft  
 Width = 32.00 ft  
 Total Area = 582 SY

**SELECT GRANULAR BACKFILL 456 CU YD**

RA  
 Length = 24.50 ft (assumed full length)  
 width = 40.19 ft  
 Lt wingwall Top EL. 609.78  
 Rt. Wingwall Top EL. 611.91  
 Geogrid Bot. EL. 603.20  
 Volume = 5804 CF  
 Total Volume = 12305 CF  
 456 CY

FA  
 Length = 24.50 ft (assumed full length)  
 width = 43.90 ft  
 Lt wingwall Top EL. 605.66  
 Rt. Wingwall Top EL. 603.13  
 Geogrid Bot. EL. 596.60  
 Volume = 6501 CF

**GEOGRID, TYPE P1 2337 SQ YD**

RA  
 Length = 24.50 ft (assumed full length)  
 Width = 40.19 ft  
 Lt wingwall Top EL. 609.78  
 Rt. Wingwall Top EL. 611.91  
 Geogrid Bot. EL. 603.20  
 Geogrid Depth = 5.89 ft  
 Geogrid Thickness per layer = 1.00 ft  
 Number of geogrid layer = 7 ea  
 Area per layer = 1336 SF  
 Total Area = 21030 SF  
 2337 SY

FA  
 Length = 24.50 ft (assumed full length)  
 Width = 43.90 ft  
 Lt wingwall Top EL. 605.66  
 Rt. Wingwall Top EL. 603.13  
 Geogrid Bot. EL. 596.60  
 Geogrid Depth = 6.04 ft  
 Geogrid Thickness per layer = 1.00 ft  
 Number of geogrid layer = 8 ea  
 Area per layer = 1460 SF

(including 10% for folding sheets and overlapping)

**SPECIAL - STEEL DRIP STRIP 326 FT**

Left edge of deck length = 162.7 ft  
 Right edge of deck length = 163.19 ft  
 Total = 326 ft

**ITEM 894E10000 - THERMAL INTEGRITY PROFILING (TIP)TEST 4 EACH**

R.A. 1 ea  
 PIER 1 1 ea  
 PIER 2 1 ea  
 F.A. 1 ea

**CONCRETE CORE SAMPLING AND GROUTING 11 FT**

P2 ONLY 11 FT (REFER TO STAGE 3 DISPOSITION OF COMMENTS AND 11/2/20 CONVERSATION WITH D9)

**CONCRETE CORE STRENGTH TEST 4 EACH**

R.A. 1 ea  
 PIER 1 1 ea  
 PIER 2 1 ea  
 F.A. 1 ea